



IEEE CINCINNATI SECTION NEWSLETTER - SEPTEMBER 2008

SEPTEMBER MEETING

Development Tools and Slick Devices from Texas Instruments that Anyone can Afford

DATE: Thursday, September 25, 2008
PLACE : Raffel's – 10160 Reading Road (see below for directions)
TIME : 5:30 p.m. to 6:00 p.m. - Social Time
6:00 p.m. to 7:00 p.m. - Dinner
7:00 p.m. to 8:30 p.m. - Presentation

COST FOR DINNER: \$10.00 per person – REGARDLESS OF MEMBERSHIP OR MEMBERSHIP GRADE!

NOTE: DINNERS ARE ALWAYS OPTIONAL - YOU MAY ATTEND THE PROGRAM ONLY.

MENU SELECTIONS: Maryland Crab Cakes, Baked Pork Chops with Apples, Boneless Chicken in Sherry Wine Sauce, Twice Baked Potatoes, Wild Rice, Sautéed Vegetables, Salad, Rolls, Assorted Bar Cookies, Coffee, Tea, Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks.

LOCATION: Raffel's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately $\frac{3}{4}$ of a mile to Reading Rd. and turn right on Reading.

RESERVATIONS: Please email Fred Nadeau for reservations at <mailto:fnadeau1@earthlink.net> (preferred) or call the Section Voice Mail at 513-629-9380 by **Noon, Tuesday, September 23, 2008** if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number.

PE CREDITS: Depending on the subject matter, attendance at IEEE Cincinnati Section Meetings now qualifies the attendee for Professional Development Hours towards renewal of Professional Engineers Licenses. Required documentation will be available following the meeting! The Section Meetings also provide a great opportunity to network with fellow engineers in the area.

ABOUT THE MEETING: This month's meeting will feature a presentation by a representative from Texas Instruments entitled "Development Tools and Slick Devices from Texas Instruments that Anyone can Afford." It will feature the MSP430 microcontroller family and their uC with RF transceiver USB development kit costing \$50 as well as less expensive kits.

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

Brian Anderson	Bobby Goins	John Andrew Mistler
Christopher C. Baker	Leonard P. Grammel	Pedram Mohseni
Nicholas Bedford	Daewoo Han	Michael Darrin Moore
Jeremy M. Bock	Kyle Matthew Hardin	Brian Nieport
Brian Booher	Kevin L. Hooker	Alex Peytchev
Sheila L. Brown	Charlie S. Howell	Srikoundinya Punnamaraju
Cristina Burcica	Hetal Jasani	Balaji Raj
Thomas Burns	Michael Jones	Yun Shuai
David Michael Cannane	Igor Kalenny	Jeffrey Spencer
Cory S. Castle	Duk Young Kim	Patrick Spicer
Christopher J. Davis	John F. Kline	Eric L. Statzer
Justin Day	Matt Knollman	Gopalakrishna R. Tadiparthi
Harry Dressler	Steven Landon	Donald R. Ucci
Timothy Joseph Franke	Gary Long	Hongmei Wang
Jeffrey Gladish	Scott Masturzo	Eric C. Wright
Nicholas D. Glockner	William McGuire	Eric Yulianto

We wish to welcome these new members to the Cincinnati Section!!!

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Bob Morrison, Editor

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Raymond A. Heising

Seventy years ago this month, the PROCEEDINGS OF THE INSTITUTE OF RADIO ENGINEERS (IRE) included a paper by Raymond A. Reising concerning the use of single sideband modulation for transatlantic radio communication. At the time, Heising, a future IRE president, was a research engineer with the Bell Telephone Laboratories.

Heising was born in 1888 in Minnesota and graduated in electrical engineering from the University of North Dakota in 1912. He went on to earn an M.S. in physics at the University of Wisconsin in 1914 and, the same year, joined the research department of the Western Electric Company New York City. One of his first assignments was to design an experimental two-channel carrier system for wire telephony. At about the same time he developed a successful vacuum-tube voltmeter circuit.

During 1915 Heising participated in the design of a vacuum-tube radio transmitter which could be picked up in France from a site in Arlington, VA. The transmitter used several hundred tubes in parallel to achieve the necessary power for transatlantic experiments. During World War I, he worked on military communication systems and, in the process, invented the Heising constant-current modulator. He authored an IRE paper on modulation published in August 1921 and received the Morris N. Liebmann Award of the IRE in recognition of his contribution to radio modulators. He became an IRE Fellow in 1923. The Heising modulator was used in radio broadcast transmitters constructed by the Western Electric Company in the 1920's as well as in military applications.

In his June 1925 paper, Heising reported the results of single-sideband radio tests between the United States and Great Britain which had begun during 1923. He included a brief explanation of the technical advantages of single sideband such as lower power requirements and more efficient use of available spectrum. He discussed the use of balanced modulators and electric filters to suppress the carrier and one sideband. He provided details of equipment currently in use for transatlantic radio service using single sideband.

Heising was elected president of the IRE in 1939 and served several terms on the IRE Board of Directors. He was a leader in the initiation of the professional group system conceived as a way to counter the tendency of new technical interest areas to form independent organizations separate from the IRE. This contribution was cited when he received the IRE Founder's Medal in 1957. He also was awarded the Armstrong Medal of the Radio Club of America in 1953. Heising received about 125 patents and worked in the patent department of Bell Laboratories from 1945 until his retirement in 1953. He died in 1965 at age 76.

*James E. Brittain
School of History , Technology and Society
Georgia Institute of Technology*

IEEE NEWS

IEEE-USA-Supported Genetic Information Nondiscrimination Act Signed into Law

WASHINGTON (30 May 2008) -- Legislation that IEEE-USA has long supported protecting people from discrimination in employment and health insurance based on genetic information was recently signed into law.

The Genetic Information Nondiscrimination Act (GINA) passed the House, 414-1, and the Senate, 95-0. President Bush signed the bill on 21 May. IEEE-USA President Dr. Russell Lefevre expressed his appreciation in a letter (<http://www.ieeeusa.org/policy/policy/2008/052108b.pdf>) to one of the bill's key sponsors, Rep. Louise Slaughter (D-N.Y.).

“The overwhelming bipartisan support for this historic legislation is indicative of the commitment by you and other congressional leaders toward ensuring our nation’s future in a rapidly changing world,” Lefevre wrote.

GINA prevents health insurance companies from changing, canceling or denying coverage based solely on a person’s genetic predisposition to a specific disease or disorder.

Advances in genetic testing have made possible early detection of a wide range of diseases with hereditary links, including diabetes, Parkinson’s disease, cardiovascular disease and various forms of cancer. Yet, people have increasingly been reluctant to undergo these potentially life-saving tests for fear that the information could be used against them.

GINA also prevents employers from basing hiring, firing and promotion decisions on genetic information. They are also forbidden from requesting, requiring or disclosing such information. Employment agencies and labor organizations are bound by similar provisions.

Bush said the law “protects our citizens from having genetic information misused, and ... does so without undermining the basic premise of the insurance industry.” See <http://www.whitehouse.gov/news/releases/2008/05/20080521-7.html>.

IEEE-USA has advocated nondiscrimination in the use of genetic information for more than a decade. The organization is a member of the Coalition for Genetic Fairness, which was founded in 2000 “to address the growing concern surrounding the misuse of genetic information in insurance and employment decisions.”

For more on the coalition, see <http://www.geneticfairness.org/>.

IEEE-USA Position Encourages Energy Efficiency to Save Households Money, Reduce Carbon Emissions

WASHINGTON (2 July 2008) -- There's little the average person can do to stem the rising cost of gasoline, electricity, natural gas and other energy sources. But by improving our energy efficiency at home, on the road and at work, we can use less energy and save money.

IEEE-USA, in an "Energy Efficiency" position adopted on 20 June, says that, "Through energy efficiency improvements, the United States can reduce energy costs; reduce the depletion of fuel resources; increase energy security; enhance international competitiveness, reduce environmental impacts and substantially reduce greenhouse gas emissions."

To that end, IEEE-USA encourages the federal government to adopt the following policies, among others, that facilitate energy efficiency by:

- * Developing technologies to further reduce energy losses in electric power generation, transmission and distribution
- * Developing, commercializing and using more efficient electric-drive transportation technologies, such as plug-in hybrid electric vehicles:
- * Improving and upgrading transportation systems to reduce energy consumption, and adopting "smart growth" policies that reduce distances traveled
- * Using communications and information technologies, such as teleconferencing and the Internet, to reduce the need for business travel, such as in telecommuting

Power electronics, which is essential for converting and controlling electric power at high efficiency, can, according to IEEE-USA, save 15 percent of U.S. electric grid energy. One of the easiest things the organization recommends is for each household to use compact fluorescent light bulbs (CFLs).

The U.S. Environmental Protection Agency and the Department of Energy says that Energy Star-qualified CFLs "use about 75 percent less energy than standard incandescent bulbs and last up to 10 times longer." Over each bulb's lifetime, this saves at least \$30 in electricity costs.

Further, if every home in America had at least one such CFL, it would save our nation "more than \$600 million in annual energy costs, and prevent greenhouse gases equivalent to the emissions of more than 800,000 cars." See http://www.energystar.gov/index.cfm?c=cfls.pr_cfls.

Continued research and development into transportation systems can also play a key role in enhanced energy efficiency. This includes the development and deployment of electric, hybrid and fuel cell vehicles; fuel-efficiency improvements in trucks, trains, aircraft and passenger cars; and greater use of public transit.

Communication systems advances, coupled with high-speed Internet access, can greatly reduce the energy consumed in business travel and save companies millions in travel costs.

BusinessWeek, in a 22 May article, "The Waning Days of the Road Warrior," said, "Videoconferencing, Web-enabled meetings, online collaboration tools -- all are giving workers the ability to dart around the globe from their desk chairs." The publication also reports that flying less is a great way for companies "to cut their carbon footprint." See http://www.businessweek.com/magazine/content/08_22/b4086065667204.htm.

IEEE-USA's "Energy Efficiency" position statement, developed by its Energy Policy Committee, is available at <http://www.ieeeusa.org/policy/positions/energyefficiency.pdf>.

See all IEEE-USA position statements at <http://www.ieeeusa.org/policy/positions/index.html>.

TUNE IN TO IEEE.TV, WETA.ORG FOR PROJECTS SUPPORTING ENGINEERING AWARENESS WASHINGTON (31 July 2008) -- IEEE.tv has prepared a special program on IEEE-USA's 2007-08 Online Video Scholarship Awards Competition for Engineering Undergraduates on "How Engineers Make a World of Difference."

Three scholarship awards totaling \$6,000 were awarded during Engineers Week in February to undergraduate students who created 90-second video clips deemed most effective in reinforcing engineers contributions to the quality of life for an 11-to-13-year-old audience. The 2008-09 online engineering video competition will be launched in September. To view the IEEE.tv program, visit <http://www.ieee.org/web/membership/IEEEtv/about.html>.

Additionally, IEEE-USA continues to reach out to some 400,000 influential Washington, D.C.-area listeners of the U.S. capital's only classical music radio station, WETA-FM (90.9), with a brief message about the organization's mission to advance the public good and to promote the career and technology policy interests of U.S. IEEE members. In August, these promotional announcements will be presented on Friday, 1 August, at 6:59 p.m. Eastern Time (ET), prior to WETA-FM's simulcast of "The NewsHour with Jim Lehrer"; on Saturday, 2 August, between 1:30 p.m. - 5:00 p.m. ET, during the afternoon opera; and on Monday, 4 August, between 6:00 a.m. - 9:00 a.m. ET, during the NPR news broadcasts. The first of some 30 15-second IEEE-USA announcements began airing on 4 January, and will continue through 6 December. To hear the programs and announcements, tune in to <http://www.weta.org/fm>.

Through these and other public awareness activities, IEEE-USA seeks to counter a public perception, cited in the most recent Harris opinion poll on engineers and scientists, that engineers contribute less to the quality of life than scientists and show less interest in their local communities than scientists. For more information, visit <http://www.ieeeusa.org>.

Energy Secretary, IEEE-Member Industry Leader to Deliver Keynote Addresses During GridWeek 2008 WASHINGTON (19 August 2008) -- U.S. Energy Secretary Samuel Bodman and Enrique Santacana, president and CEO of ABB Inc., will be the keynote speakers during GridWeek 2008 in Washington.

The event, 22-25 September at the Ronald Reagan Building and International Trade Center, is an annual gathering of smart grid stakeholders and thought leaders. IEEE-USA is a major partner of GridWeek 2008.

Bodman and Santacana will deliver their addresses on Wednesday 24 September from 8:30 to 9:30 a.m.

The smart grid employs modern communications and computing power to upgrade the electric power system, making it more reliable, efficient and capable of delivering additional services to consumers. It is expected to save customers money and reduce carbon emissions.

Bodman, who earned a bachelor's degree in chemical engineering from Cornell and a doctor of science degree from MIT, was an associate professor of chemical engineering at MIT from 1965-71. He was sworn in as energy secretary in February 2005 and leads a department with a budget of more than \$23 billion and over 100,000 federal and contract employees.

Santacana, an IEEE member and licensed professional engineer in North Carolina and Puerto Rico, is also region manager of ABB North America. ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance and reduce environmental impact. Its world headquarters are in Zurich, Switzerland.

Santacana was appointed to the Energy Department's newly established Electricity Advisory Committee in April. The group was formed to help the department meet the requirements of the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007, sections of which IEEE-USA supported.

According to the GridWeek 2008 Web site (<http://www.gridweek.com/2008/default.asp#>), "A realization is emerging that a new view of energy, beyond oil, coal and other fossil-based fuels, will result in decentralized components of the electricity grid, a far cry from the central generation and structured system of the past."

GridWeek 2008 will also feature the first International Smart Grid Summit to discuss smart grid developments around the world. To register for GridWeek 2008, go to <http://www.gridweek.com/2008/default.asp#register>.

High-Tech Innovations Needed to Help Prevent Economic Crisis in Health Care and Improve Quality
WASHINGTON (22 August 2008) -- The United States should develop a comprehensive strategy on the growing need for technological innovations to help prevent the impending economic crisis in health care and to improve the quality and convenience of care, according to a report from the 2007 conference "Economic Strategy for Health Care through Standards and Technologies."

By shifting to a more proactive approach for disease prevention and more efficient, quality-centric care, new measurement technologies at the molecular level will be required. "A shift of such magnitude can only happen by developing and implementing breakthrough biomeasurement, bioinformatics, biologically based and health information technologies that can be integrated with current efforts to improve health care delivery," the report said.

Organized by the Biotechnology Council, which includes the IEEE, and the National Institute of Standards and Technology (NIST), the conference was held at NIST headquarters in Gaithersburg, Md., on 25 September 2007. Speakers included leaders in medicine, health care, government and industry.

The report is available at:

http://www.ieeeusa.org/volunteers/committees/mtpc/documents/BioeconomicsConferenceReportFinalAug2008_000.pdf

According to the report, new measurement and in vitro visualization technologies will generate huge amounts of data, requiring advanced computational analysis to identify significant pieces of information.

"Before these technologies can be realized and commercialized, however, a long-term economic health care strategy must be established, with clear metrics for measuring and determining the value of emerging bio and information technologies," the report said. "Creating this strategy will facilitate proper allocation of financial resources and ensure a focus on implementing the most promising technologies."

**\$5,000 IN SCHOLARSHIP PRIZES TO BE AWARDED IN SECOND IEEE-USA ONLINE
ENGINEERING VIDEO COMPETITION FOR UNDERGRADUATES ON 'HOW ENGINEERS
MAKE A WORLD OF DIFFERENCE'**

WASHINGTON (26 August 2008) -- IEEE-USA is launching the organization's second online engineering video competition for undergraduate students on "How Engineers Make a World of Difference," and will award four scholarship prizes totaling \$5,000 to the undergraduates who create the most effective 90-second video clips aimed at an 11-to-13-year-old student audience. The clips should reinforce engineers' contributions to the quality of life and convey how engineering can be a creative and rewarding career. Winning entries will be announced and shown during Engineers Week, 15-21 February 2009.

The competition is open to all U.S. undergraduate students in engineering, computer science and information technology. Entries can be provided by individuals or teams, with at least one undergraduate participant who is an IEEE Student Member. More than one video entry is permissible.

Entries must be submitted through YouTube by midnight Eastern Time on Friday, 16 January 2009. The competition will be judged by two engineering graduate students, Andrew Quecan and Suzette Presas; and Nate Ball, engineer-host for PBS' "Design Squad."

For more information on how to enter the IEEE-USA Online Engineering Video Scholarship Competition and to upload an entry on YouTube, go to http://www.ieeeusa.org/communications/video_competition

To view the IEEE.tv program on the first 2007-2008 IEEE-USA competition, go to <http://www.ieee.org/web/membership/IEEEtv/about.html>

IEEE-USA has been actively involved in promoting public awareness of engineers and engineering since 1981. Working in tandem with its sister organizations, IEEE-USA has helped to foster and maintain a positive image of engineers and engineering through a variety of programs aimed at specific audiences using targeted media.

For more information on IEEE-USA's public-awareness program, see <http://www.ieeeusa.org/communications/default.asp>

**IEEE/IEEE-USA Seek Nominations for 2009 "New Faces of Engineering"
Recognition Program**

WASHINGTON (27 August 2008) -- The Engineers Week (EWeek) "New Faces of Engineering" program recognizes engineers new to the profession with outstanding educational and career accomplishments. The IEEE and IEEE-USA are seeking nominations for the 2009 "New Faces" campaign.

The program is open to IEEE members worldwide and international nominations are encouraged. Dr. Rajarshi Mukhopadhyay, a mixed-signal design engineer with Texas Instruments in Dallas, was the IEEE/IEEE-USA's 2008 "New Face."

The EWeek "New Faces of Engineering" program is designed to promote the importance of technical education, celebrate engineering careers and recognize significant contributions to the engineering profession and society. Each year, the EWeek Web site (www.eweek.org) features the photos and biographies of five notable young engineers from each EWeek sponsoring society. Each society's top nominee is recognized during EWeek in a full-page ad in USA Today.

EWeek 2009 is 15-21 February.

To be eligible for recognition, engineers must be 30 or younger as of 14 November 2008, have a degree in engineering from a recognized U.S. college or university or equivalent international educational institution. Degrees in engineering technology, science, computer science and similar disciplines do not qualify; a degree in computer engineering is acceptable. Nominees must be a member of a sponsoring EWeek partner.

IEEE nominations can be submitted through IEEE regional directors, section and GOLD chairs, or independently, and should be directed to Helen Hall at h.hall@ieee.org. The nomination form and more information are available at <http://www.eweeek.org/site/Engineers/newfaces2009/nomination.shtml>.

The deadline for all IEEE nominations is 17 October 2008.

For more on all the 2008 “New Faces” honorees, go to http://www.eweeek.org/site/News/Eweek/2008_newfaces.shtml

Sponsored by more than 100 engineering, science and education societies, as well as major corporations dedicated to increasing public awareness and appreciation of engineering, EWeek is celebrated annually by thousands of engineers, engineering students, teachers and leaders in government and business. The IEEE served as lead society during EWeek 1993 and 2004.

The National Society of Professional Engineers and the Intel Corporation are serving as EWeek 2009 co-chairs.

The “New Faces of Engineering” program was the American Society of Heating, Refrigerating and Air Conditioning Engineers’ legacy project for EWeek 2003. The program is now in its seventh year. The IEEE/IEEE-USA’s “New Faces” each year were:

2003 -- Deborah Zwitter, IBM Corporation, Essex Junction, Vt.

2004 -- Dominique Green, Accenture, Reston, Va.

2005 -- Dr. Mark Hersam, Northwestern University, Evanston, Ill.

2006 -- Vanessa Koutroupas, General Dynamics Advance Information Systems, Bloomington, Minn.

2007 -- Dr. Carlos Cordeiro, Philips Research North America, Briarcliff Manor, N.Y.

2008 -- Dr. Rajarshi Mukhopadhyay, Texas Instruments, Dallas, Texas

The IEEE Cincinnati Section Executive Committee **Member Names and Phone Numbers**

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